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Communications.

TEACHING THE DEAF AND DUMB TO SPEAK.

By Laurence Turnbull, M. D.

Physician to the Department of the Eye and Ear, Howard Hospital, Philadelphia.

Continued from page 454.

Speech is voice modulated by the throat, tongue, and lips; this modulation of the voice into speech is effected by changing the form of the cavity of the mouth, lip, nose, and throat, by the action of the muscles which move the walls of these parts. This is not to be taught simply by imitation, as in the old method, but the pupil is made to comprehend the use of every portion of the vocal apparatus by making sounds before attempting to speak words; and the new alphabet of Mr. Bell is one which is specially adapted to the purpose. By the old method, the child had simply the lips of the teacher to study; no proper alphabet or illustrations on the blackboard to assist him in the form in which the lips, tongue, etc., were to be placed; so that hundreds of sounds which a child could not obtain by the imitation method alone, have been accomplished by means of visible speech. A bright adult deaf mute, by this method, has been able to acquire most of the sounds of the English language in ten lessons.

In 1869 the first attempt was made to communicate a knowledge of "Bell's symbols" to deaf mutes in a private establishment in London, conducted by Miss Hull. No difficulty was found in giving the idea to four children, the eldest about twelve and the youngest seven years of age, and nearly all the elementary sounds of the English language were obtained from them in a few days.

Lectures were then given in various towns of the United States. Prof. E. M. Gallaudet, President of the College for Deaf Mutes at Washington, thus expresses himself in regard to visible speech: "Use has been made of this system with gratifying results. It has rendered most valuable service to this department of deaf mute instruction."

In the Boston Day School for Deaf Mutes, which, by the way, should be established in every large city, Mr. A. G. Bell, son of Prof. Bell, taught the pupils by his father's method for six weeks, also instructing the teachers in the theory of the system. Of the results of this experiment, the following extracts from letters addressed to him will show the good results obtained. The committee say:—

"The system of visible speech introduced by you has given the teachers an instrument of incalculable value in teaching deaf mutes (congenital as well as others) to articulate clearly and correctly."

Miss Fuller, the Principal, gives the following opinion:—

"I can say with confidence that I have found 'visible speech' of the greatest assistance."

The consonants b, d, and g, which are the most difficult to obtain by imitation, are, by means of the symbols, produced with great ease and accuracy; and the consonant combinations, such as ct, ks, nd, etc., which were often very faulty, are, by this system,

acquired perfectly. In teaching vowels it is of especial value. The visible speech symbols make the child conscious of the correct position of the mouth for producing these sounds. Hitherto such elements have been our greatest difficulties. I have been able to correct, in several cases, very imperfect sounds which had baffled all attempts under the old system of imitation. The superintendent, John D. Philbrick, Esq., thus indorses what has already been stated:—

"Heretofore, instruction of deaf mutes in artificial articulation has been wholly imitative and empirical; and although the system is extensively employed, it has produced useful results only at the expense of incredible labor and patience on the part of both teachers and pupils. You have, by your experiment in our school, proved the practicability of producing in congenital deaf mutes, perfect articulation, with vastly less labor than has been required to produce only imperfect articulation. What is still more wonderful, if possible, you have succeeded in enabling deaf mute pupils to modulate the voice, by giving a higher and a lower pitch, and upward and downward and circumflex inflections. The system* does not, as stated by Mr. Bell, interfere with any existing plan of education. Visible speech takes no part in the contest between articulation on the one hand, and signs and manual alphabets on the other. Here is a means by which you can obtain perfect articulation for deaf mutes; make what use of it you choose.

He places it in the hands of the teacher with general directions how to use it.

"Visible speech" is not necessarily associated with lip-reading. There is no doubt that in schools where lip-reading is employed the symbols will materially assist the pupils by showing them *what to look* for in the *mouths* of *hearing persons;* but this is apart from its greater sphere of usefulness, as a means of communicating articulation.

(c) "Visible speech" does not profess to teach the deaf to *modulate their voices;* it deals with articulation pure and simple; yet deaf mutes may be taught to modulate their voices, and to read with expression by means of visible speech, which aims at representing pictorially the changes of the voice in regard to force, duration, and pitch. This system constitutes an elocutionary, and in its fullest development a musical notation, accomplishing for the throat what visible speech does for the mouth.

We all know that most of the deaf mutes give, on the play-ground and elsewhere, perfectly natural inflections; they laugh and cry like other children, except in a heightened pitch. The problem is to make them conscious of the movements of their voices. Experiments which the writer has witnessed within a few weeks in the American Asylum, Hartford, prove that this can be done. (For this opportunity we are indebted to Prof. Stone and his assistant, Miss Sweet).

(To be Continued.)

* American Annals of the Deaf and Dumb, Visible Speech, by A. Graham Bell, to whom the writer is indebted for a portion of the facts contained in these papers in reference to his father's method. (A. Melville Bell, Professor of vocal physiology, and author of a new species of phonetic writing.)

AN IMPROVED ELIXIR OF CINCHONA.

By C. G. Polk, M. D.,
Of Philadelphia, Pa.

The importance of a thoroughly well compounded elixir of cinchona is so well understood that I may be doing some service to the profession by sending you a formula which has been thoroughly tested. It is as follows:—

℞.	Cinchoniæ sulph.,	ʒiij.
	Quiniæ sulph.,	ʒij.
	Acidi citrici,	ʒiv.
	Acidi sulph. dil.,	q.s.
	Aquæ ammoniæ,	q.s′.
	Cort. aurant. recent.,	ʒij.
	Pulv. cardamomi,	ʒv.
	Alcohol, deodorized,	Ojss.
	Sacch. alb.,	ʒxxiv.
	Aquæ,	Oiv.
	Caramel,	m. xl. M.

Thoroughly bruise the orange peel in a mortar, and mix with the cardamon; pack them in a percolator and pour on the alcohol mixed with one and one-quarter pints of water, and percolate, by adding sufficient water, until three pints have passed. Dissolve the cinchoniæ and quiniæ in four ounces of water by aid of dilute sulph. acid; precipitate the alkaloids, wash carefully, and dissolve in four ounces of a slightly acid solution of the citrate of potassa; mix with the tincture, and filter; add the sugar and caramel, and dissolve without heat.

To this elixir the addition of liq. citrate

of iron, or a corresponding solution of the soluble phosphate of iron of a corresponding strength, produces a ferrated elixir, and two grains of strychnia to the pint produces the elix. of iron, cinchona and strychnia of a fine quality. I should have stated that the citric acid is used in forming the citrate of potassa. This formula is the creation, as far as I know, of Dr. A. D. HAUVERMAN, of Chattanooga, Tennessee, and seems to meet very well every want in an elixir of calisaya. The solution of the alkaloids in the solution of the citrate of potassa is made with a view to forming the ferrated elixir extemporaneously, by adding citrate or phosphate solution, otherwise the sulphates would be preferable.

HOSPITAL REPORTS.

UNIVERSITY OF PENNSYLVANIA.

Service of Prof. D. Hayes Agnew.

[REPORTED BY DE FOREST WILLARD, M. D.]

Stone in the Bladder. Lithotomy.

Gentlemen:—The little patient before you, four years of age, has suffered for two years with symptoms of vesical irritation; slight at first, but now increased to such a degree that his parents have brought him here for relief. His most prominent symptoms now are: a frequent desire to pass his water, great pain and straining in the performance of the act, an occasional sudden arrest of the stream, and lastly, that prominent symptom of irritation at the neck of the bladder, *i. e.*, pulling at the prepuce to such an extent, even, as to cause its decided elongation. This latter sign, let me here remark, is not always an evidence that there is a stone in the bladder, for you will frequently find it present in any of the diseases which cause a local irritation at the vesical cervix. The remote expression of this irritation is attributable to the fact that the nerve-centres are accustomed to refer all impressions received upon the int. pudic nerve to its extremity, and have not learned to locate the precise intermediate point of disturbance, just as a man takes cognizance of his hand after it has been amputated, simply because his nerve-ganglia have been in the habit of referring all sensations to the extremities of those nerves which have been divided.

We have prejudged this case, however. The boy may not have any trace of a stone at all, for all these symptoms may be present in other diseases, as cystitis, irritable bladder, enlarged prostate, etc., etc., although in these latter complaints they are not usually as persistent as in stone. There is, however, a positive means of diagnosis, which I shall now employ, namely, the "sound"—a steel instrument which is not used as frequently as it deserves. It is as important in the diagnosis of vesical and urethral diseases, as is the opthalmoscope in the deep-seated troubles of the eye; in fact, I might lay down the rule that in every case of vesical disease it should be introduced. I now pass this sound, and after a few moments' manipulation am able to discover the presence of a small rough body, and as I attach this sounding-board of deal-wood to the handle of my instrument, I think that the click will be audible to every person in this room.

This boy has, then, a calculus; but, suppose that we had not discovered it, would that have been proof that none existed? No; for it is a procedure that often fails, from the fact that the stone may hide itself in some little pocket or fold in the mucous membrane, and thus escape the touch of the instrument, or, it may lie in a little pouch which it sometimes makes for itself at the base of the bladder; or, it may be what is called an encapsulated stone; or, again, it may be covered in by the apposition of the walls of a bladder which is empty and relaxed. Some of these difficulties may be avoided by having the patient retain his urine for several hours previous to an examination, or by the injection of a quantity of flaxseed mucilage, but even then it is sometimes necessary to repeat the operation of sounding, two, three, four, and rarely, a dozen times, before your mind is fully established in its opinion. A finger in the rectum, sounds of different curves, and change of position in the patient, may often aid greatly in diagnosis. Could a surgeon receive a rough sensation from the sound and yet no stone be present? Yes, a thickened, roughened, fasciculated condition of the mucous membrane might possibly deceive an inexperienced hand, or a calcareous deposit in the prostrate gland might mislead, or again, the calculus might be urethral. I have myself seen people cut for stone, when none was found, and in one case I remember that the operation was twice performed, the stone being finally discovered suspended, pendulum-like, by a band of lymph from the fundus, after it had been well nigh given up the second time.

If any of you were present at this clinic some two years ago, you may remember also a case in which the stone was exceedingly difficult to find, being held firmly upon the anterior wall of the viscus, by strong bands of lymph. With these precautions then, as to the detection of the presence of such a foreign body, we are ready to devise means for its removal, but while the boy is being etherized, let us study for a few moments the nature of the disease. Calculi may be either nephritic or vesical in their primary origin; in the former case they are the result of a diathesis; in the latter, the diathesis may, or may not be present, but the immediate point of commencement is a nucleus in the form of a foreign body, as a pin, pencil, stick, etc.,

(introduced in sport by boys or men,) or even from a blood clot, or pistol ball. Around this as a centre, the urinary salts deposit themselves in concentric laminæ, urates and phosphates sometimes alternating in the same stone. The uric acid calculus is found in nearly two-thirds of all the cases, the next in frequency being the oxalate of lime or mulberry variety, while the phosphatic concretion is seen less seldom.

The increase in size is sometimes exceedingly slow. You all doubtless remember the large stone (2300 grains) which I removed here last year, and which was of twenty-seven years' growth. The symptoms which we have seen in the case before us are largely due to mechanical irritation and obstruction. In adults we not unfrequently have periods of acute exacerbation, in which all the symptoms are greatly aggravated, and are accompanied by high fever and great constitutional disturbance. Such attacks are called "fits of the stone," and are best relieved by warm baths or fomentations, large doses of opium by the rectum, and occasionally by the administration of anæsthetics.

As the case progresses the symptoms become more urgent, and the mucous membrane is often so inflamed as to give rise to frequent slight hemorrhages or to the presence of pus and mucus in the urine. The urine, let me here remark, should *always* be microscopically and chemically examined in every case of stone, since, if severe renal disease be present, an operation would be very hazardous, in fact, I am confident that many deaths have followed lithotomy from a neglect of this simple precaution. Such examination has been made in the case before us, and finding neither casts, albumen, or other greatly abnormal constituents, we feel assured that we have sound kidneys to assist us.

The boy has also been prepared for the operation by a general constitutional treatment of alteratives, diaphoretics, diuretics, etc. For the past five days he has taken three drops of liq. potassæ in a wineglass of milk, three times in the twenty-four hours. Yesterday his bowels were freely opened by the use of castor oil, and they have been washed out this morning by a full enema, after which an injection of three drops of tinct. opii was given to put them at rest.

The operation which I propose to perform is the ordinary lateral one, commonly known as Cheselden's. For its intelligent performance a thorough knowledge of the anatomy of the parts is essential, yet this is a point neglected by many surgeons. Let us study it carefully.

The perinæum is a lozenge-shaped space, bounded behind by the coccyx, in front by the pubis, and upon the sides by the rami of the pubes and ischia and the sacro-sciatic ligaments. Its size depends upon the position of the limbs. It is divided into two portions, the anterior or urethral or true perinæum, and the posterior or anal. The posterior is divided by the bowel into two fossæ called ischio-rectal. They are triangularly-shaped cavities, with their apices at the junction of the obturator and levator ani fascias, which form respectively the outer and inner boundaries of the fossæ. The anterior boundary of the anal perineum is formed by the middle perineal fascia; the posterior by the gluteus muscle and sacro-sciatic ligaments, while the whole space upon either side of the rectum is filled with fat and connective tissue.

The anterior or urethral perinæum is all that portion in front of a line joining the ischiatic tubers, and is triangular in shape. It is covered first by skin, then by the *superficial perinæal fascia*, in which lie the fat before mentioned, and the inferior hemorrhoidal vessels and nerves. Next comes the *middle perinæal fascia*, a strong membrane covering in the muscles at the root of the penis. The attachments of this fascia upon the sides are to the outer lips of the rami of the pubes and ischia, externally to the crura of the penis, as far back of the tuberosities; in front it is continuous with the dortos structure of the scrotum, and behind arches upward behind the transversus perinei muscles, to attach itself to the anterior layer of the deep perinæal fascia, thus forming the boundary line between the two perinæums. It is this fascia which prevents extravasation of urine in cases of rupture of the urethra, the liquid being unable to force itself backward beyond this partition. Lifting away this fascia we see the transversus perinæi, accelerator urinæ and erector penis muscles, the superficial and transverse perinæal arteries, and the superficial perinæal, and inferior pudendal nerves.

The *deep perinæal* fascia or *triangular ligament*, lies directly beneath these structures. It is the anterior closure of the inferior pelvic strait, and is a strong, dense membrane attached firmly to the symphysis, sub-pubic ligament, and rami of the pubis and ischia, beneath the crura of the penis.

Behind, its anterior layer is attached to the middle perinæal fascia as before stated; its posterior (for there are two, one arising from the anterior, the other from the posterior lip of the rami) curves upward, and is lost in the recto-vesical connective tissue. The point where these fascias converge to meet the sphincter muscles of the anus is called the "central tendinous point of the perinæum." Between the two layers of the triangular ligament lie the membranous part of the urethra, the compressor urethræ muscle (muscles of Wilson and Guthrie), Cowper's gland, the dorsalis penis vein, the pubic and bulbous vessels and nerves, a plexus of veins, and the crura of the penis. Behind this fascia are the vesiculæ seminales, prostate gland, prostatic plexus of veins, vas deferens and neck of the bladder.

Now, in the operation which we propose to do, this anterior perinæum must necessarily be opened into the posterior, and many of these structures must be injured. We must cut

through skin, superficial fascia, inferior hemorrhoidal and superficial perinæal vessels and nerves, middle perinæal fascia, transverse perinæal muscle and artery, a few of the fibres of the accelerator urinæ and levator ani muscles, deep perinæal fascia or triangular ligament, fibres of the compressor urethræ, the membranous and prostatic portions of the urethra, the prostatic gland with its plexus of veins, and, lastly, the neck of the bladder.

The incision should commence one and one-quarter inches in front of the anus, and a little to the left of the median line, extending thence to a line or two outside the central point between the anus and ischiatic tuber. The staff must be held by a good assistant, firmly and immovably against the arch of the pubis, with the groove a little to the left. It must not change its position until the bladder is entered. The practice of pressing it downward so as to cause the perinæum to bulge, I consider as unsafe. As soon as the external incision is made, the left forefinger is introduced into the wound and there retained, guiding the knife and holding the rectum aside until the operation is completed. As soon as this finger detects the staff, the point of the knife is inserted into the groove, when, with one long, pushing stroke, all the structures from the membranous portion of the urethra to the neck of the bladder are divided, and a gush of urine takes place. I do not deem it necessary to inject the bladder. During every step of the operation the edge of the knife should be well lateralized to avoid the rectum. The gorget is often used at this step of the operation, but I prefer to continue on with the same long, narrow bistoury with which I make the first incision. The staff is now withdrawn, and the finger carried into the bladder, when, if the opening already made be not large enough to permit of the passage of the stone, it may be again nicked with the knife, or preferably, dilated to a moderate extent with the finger. The forceps are now introduced alongside the finger, the stone firmly grasped and then withdrawn by a gentle sawing motion, thus slowly dilating the opening if the concretion be a large one. The finger should be again introduced to seek for a second calculus, or for fragments; then a large quantity of tepid flaxseed mucilage thrown in through a large catheter in order to wash out all debris. Hemorrhage is controlled, and then the patient is ready to be drawn up in bed.

Now what are the dangers in this incision. If you carry the knife too far in posteriorly, you may injure the rectum and produce a stercoraceous fistula; too far in anteriorly, and you strike the bulb of the corpus spongiosum; too far forward, the artery of the bulb; too far out, the internal pudic; too far back, the prostatic fascia, allowing extravasation of urine into the connective tissue which is in close proximity to the recto-vesical fold of peritoneum. This latter tissue is so loose that even a worse mistake might occur, namely, not entering the bladder at all.

In regard to the subsequent treatment. In uncomplicated cases it is very simple, the urine being allowed to flow through the opening at will, when it is received upon a folded sheet, one end of which has been placed beneath the patient, and which is to be drawn through and rolled up as fast as it becomes wet, thus keeping the parts clean and unirritated. No catheter is introduced into the wound, no dressing applied, no fixed position demanded, the child being simply allowed to lie as best suits his comfort.

The swelling of the lips of the wound may force the urine through the urethra during the next day, but for the following two weeks it it will probably be passed by the wound, until granulation has occurred to such extent as to cause the stream again to assume the normal route. Perfect cleanliness, good air, milk and beef essence are essentials. The bowels should not be opened until the fourth day, when an enema of castor oil may be given. Of the treatment of complication I will speak in future, as other cases shall present themselves.

(The lateral operation was then performed and a small uric acid calculus extracted without difficulty. The hemorrhage was not sufficient to demand the application of a ligature, soon ceasing of its own accord. The boy had not an untoward symptom, the wound healing so rapidly that he was discharged from the ward in two weeks. Dr F. W.)

Bursal Tumor.

The next case is a man who has been suffering for several years from a large growth situated just over the metacarpal bone of the thumb. It is regular in outline, but of an elongated form, being fully as large as the original member itself. It is hard at some points; soft and almost fluctuating at others. Its growth has extended over many years and it is unaccompanied by any more pain than a simple stiffness. I am confident that it is simply a very large ganglion developed upon the extensor muscles of the thumb. I also believe that palliative treatment or injections would be of no service, and shall accordingly cut down upon it, and dissect it off the sheath of the tendon, removing all the enveloping wall or cyst. (The operation was then performed and a compress firmly applied to the part. Dr F. W.)

Hydrocele.

The next case is a little boy six months old, who has a hydrocele upon the left side. It is now increasing in size and must be arrested. I shall therefore to-day simply puncture the sac, draw off the liquid, and then apply a liniment of muriate of ammonia. If this is not successful I shall then pass through the sac a simple strand of silk allowing it to remain in situ until it has produced a sufficient amount of inflammation, when it will be withdrawn. In young children this method of cure is usually all-sufficient.

PENNSYLVANIA HOSPITAL.

Medical Clinic of J. M. DaCosta, M. D., Professor of the Practice of Medicine in the Jefferson Medical College.

[REPORTED BY RALPH M. TOWNSEND, M. D.]

Right-Sided Hemiplegia, from Clot and Softening, with Aphasia, following Cerebral Embolism and Bright's Disease—Death and Post-mortem.

The history of the man now brought before you cannot, unfortunately, be given in detail. He was in such a state when he was brought to the hospital that no information could be extracted from him. He was, as you see him now, very ill.

T. B., aged 66 years, was brought to the hospital, November 4th, from his office. There he was found in a comatose condition. It was not known how long he had been so. The statement of those who brought him, if it can be believed, was that he was perfectly well forty-eight hours prior to the attack.

When he came to the hospital his right side was paralyzed; he had complete aphasia, and has not uttered a word since his admission. Sometimes, when spoken to, he will give vent to a thick mumble. He passes his urine unconsciously, although his bladder has not suffered from over-distension. His pupils were somewhat dilated, and responded sluggishly to light. He was freely purged with croton oil; had a blister to the back of his neck, and along with mild nourishment has taken five grains of the iodide of potassium three times daily.

Present examination shows his pupils to be small and contracted, and scarcely responding to light. The hand, when taken up, falls a lifeless mass, and so does the leg. When the sole of the right foot or the inner side of the corresponding leg is tickled or pricked with a pin, but little impression is made, showing that reflex action is almost destroyed. In this respect he is worse than on his admission. A drop of croton oil, three times repeated, also failed to move him yesterday. On his first admission, one drop produced copious purgation. When directed he puts his tongue well out, it is somewhat coated. A strong current of electricity moves the right leg only a little, certainly less than the left. In the left leg it evidently produces pain. We find, therefore, that electro-muscular sensibility is not as good in the right leg as in the left. The face is not much affected, it droops a little and the left corner of the mouth is slightly drawn up; but, as the tongue is fairly protruded and the eyelids rise, we may say there is little facial palsy. As regards palsy, our patient is worse than on admission. As regards his intelligence, he is not worse.

On auscultation the heart gives a marked murmur, systolic, harsh, followed by a second sound which is short. The murmur is heard over the whole region of the heart, but its point of greatest intensity is at the apex. The pulse is strong and tense, it has not reached above 86 since the patient's admission. His respiration is between 22 and 24; and the temperature is 100° F., from which it has varied but little. The man has not been in pain, he has rather been stupid and disposed to sleep. There is no increase of the liver or spleen, no dropsy, no swelling of the feet.

His urine, on first analysis of a small quantity, gives an alkaline reaction, S. G. 1040, and contains a large amount of phosphates and albumen; no sugar.

From what has preceded, we come to the conclusion that this patient has had a clot or clots effused on the left side of his brain, anteriorly, and very likely involving the left corpus striatum. We have to look for this apoplexy in the state of his blood-vessels (which have undergone degeneration), aided by the condition of his kidneys.

It is but fair to presume that this tissue change which has involved the vessels elsewhere, has included those of the brain. If we know that the condition of the kidneys favors such degeneration, we are a long way on our diagnosis. This man suffers from an apoplectic clot, with degenerate vessels, attended with involvement of the heart and kidneys.

We know that motor palsy is apt to be complete when the corpus striatum is involved; and we know that in diseases of the left side of the brain we have palsy of the right, and *vice-versa*. As this man's sensation is also impaired it is likely that the opthalmic thalamus is involved in the disease. In regard to the aphasia, I don't teach you that we should always locate the paralysis of speech in the third frontal convolution of the left side of the cerebrum; but, in a vast majority of cases, it occurs associated with disease of the left side of the brain, and it is the left side of the brain anteriorly and high up that bears the brunt of the mischief.

Nov. 16th. I shall this morning continue the case of our patient, T. B. You will remember that we had reason to believe that the extravasation was of an acute character. Apoplexy, as a termination of Bright's disease of the kidney, is not unusual; and Bright's disease is fatal in a large proportion of cases on account of this effusion. In certain forms of Bright's disease this tendency to cerebral complication is more common than in others. It is apt to happen in advancing stages of chronic tubular nephritis, and still more so when the kidney is small and contracted.

Such was our view in this case, and the absence of dropsy was a striking point in favor of it. We are apt to find, moreover, the capillaries in the brain in a similar condition to the capillaries in the kidneys. Valvular involvements, with some enlargement of the ventricles, are also apt to exist, and thus we see how the effusion is facilitated; and there may be in consequence of the valve trouble and kidney disorder, clogging of the cerebral vessels. Regarding our patient after the last clinic, he

remained just as you saw him. The paralyzed limb showed signs of its nutrition being considerably affected. Bed-sores were limited to the right side, and while one side perspired the other did not. The hand on the affected side also became swollen, œdematous effusion taking place both in the hand and forearm. His pupils remained unyielding to light, and he never spoke, although when told to put out his tongue he did so. His pulse became rapid and barely controlled by aconite.

After you saw him he was again freely purged and blistered: his iodide of potassium was increased, and he took two drops of the tincture of aconite three or four times daily. The medicines had but little effect, and he died this morning.

Post-mortem examination. The kidneys are dense and firm, their tubular matter is much destroyed, thus showing Bright's disease in its advanced stages. Section of the liver shows fatty degeneration of the nutmeg variety. The spleen is small, anæmic, and friable. The valves of the heart are thickened and covered with vegetations. The heart tissue is fatty, being soft and easily torn. The heart is slightly increased in size, but there is no dilatation, on the contrary, the muscular walls on the left side are slightly thicker than normal. It would be hard to find a finer specimen of its kind than this mitral valve with its thickening. The left lung looks anæmic; the right, especially the upper lobe, is congested and denser than normal. The brain is of moderate size. A piece cut off from the top of the convolution shows considerable effusion in the sub-arachnoid spaces. The membranes are injected and have lost their transparency. There is a clot in the left internal carotid, just at its bifurcation, stopping the supply of blood to the left anterior and middle cerebrum. There was also a clot in the anterior right cerebral artery, at the junction of the anterior communicating. The left corpus striatum contained numerous apoplectic clots and was much softened, as were also the convolutions of the island of Reil and those immediately surrounding it. The posterior portion of the left cerebrum did not seem to be affected; and the opposite side of the brain was healthy.

When you take into consideration the portion of brain found diseased, you find it corresponds with that portion whose arterial supply has been cut off by the plugging.

Disease of the left side of the brain, particularly anteriorly, is associated whith loss of speech: this is my experience, although I have met with occasional exceptions. We have a striking illustration in this case of how aphasia is associated with disease of the brain anteriorly.

When we look back over this case, was there anything in the patient's history which could have explained to us the occurrence of this clot? I think not. The disease of the heart might favor such a view, but we never could be certain of it. If this disease had happened in a young person, whose kidneys were unaffected, then we might have more strongly suspicioned clot.

One clinical point in this case, which did not escape notice, would have guided us more, viz: the great throbbing of the vessels of the neck. In cerebral embolism the carotids throb inordinately on the side of the clot.

Where did this plug come from: did it form in the brain? Most likely not; in all probability it originally consisted of one of those vegetations washed from the mitral valves of the heart.

Did we act correctly in this case: should we have done anything else? I think we acted correctly. The point of doubt in my mind was as to whether we should have bled. I came to the conclusion we had better not, for two reasons.

In the first place, although there were the most evident signs of pressure, we thought that it was closely linked to some degeneration of tissue. It had come on in an old man, with signs all over his body of a general breaking up. Our inference was that it was not due to immediate congestion of a previously healthy part, but rather a giving way or cessation of life, in such a manner as allowed of easy effusion of blood. We thought the tissues where the effusion took place were, in all likelihood, softened. If, under these circumstances, we had taken enough blood to make a decided impression, we should have withdrawn from the old man that which he could not readily re-supply, and thus we would increase the softening.

2. I was not quite sure as to the duration of the disease. The history was unreliable. I think it had existed longer than was stated. In a younger person, with a distinct history, with signs of degeneration less marked, and where the possibility of embolism existed, I should most unhesitatingly have bled from the arm.

Serous Apoplexy Resulting from Uræmic Coma.

The result of another *post-mortem* examination is now brought before you.

The patient was brought into the house on Sunday, Nov. 17th, in a comatose condition, by a policeman. The latter said he had picked the man up in the street, in the same condition, the previous evening. He was at first supposed to have been injured in some way, but as no marks of violence could be discovered upon him, he was placed in the medical ward. His breath smelled strongly of alcohol mixed with something else. His pupils were natural and responded readily to light; his breathing was whiffing, the cheeks being puffed out at each respiratory movement. His pulse was 120, and very weak. No reflex movement was produced by tickling or pricking the soles of his feet, nor were there any expressions of pain. If the skin on the inner surface of the thigh was pinched, the testicle was retracted.

He was ordered ten drops of the tincture of digitalis every two hours, and was purged with croton oil. His urine was examined by my

assistant,* as is our invariable custom, and was found to be acid in reaction, s. g. 1026, and contained a notable amount of albumen. The microscope showed fatty and granular casts. The man had a slight convulsion on the afternoon of his admission. The next day he tried several times to get up, and succeeding once, fell upon the floor. He was again purged with four drops of croton oil, administered at intervals of two hours, and was ordered five minims of muriatic acid every four hours. Cold cloths were kept to the back of his head.

Nov. 19th, a glass rod dipped in muriatic acid and held before his mouth shows cyrstals. His urine was alkaline, s. g. 1028, and albuminous. He died on the morning of Nov. 20th.

We have therefore a man picked up in the streets, comatose, about whom we know nothing, not even his name. He lies in the hospital with hot skin, his body for the most part relaxed, and with signs of cerebral compression.

What caused the compression? We looked at the head in vain; there was no disease of the heart, no marked lung symptoms, no vomiting. The case was evidently one of uræmic coma.

Looking at the specimens before us we find the liver highly fatty, the spleen soft, the heart healthy. But when we examine the kidneys we find they represent one of the forms of Bright's disease in which considerable exudation has taken place between the tubules, and, in fact, causing the tubular structure in some places to totally disappear. The brain shows some congestion of its membranes (the specimens are yet fresh) with effusion under the dura-mater, the arachnoid, and within the ventricles. The brain is congested, but its structure is healthy. The case is one, then, of serous apoplexy resulting from uræmic coma.

You could not have a more striking example of the latency of kidney disease and its consequences, than this case affords. It also teaches you the importance of examining the urine.

This man might not have been treated at all, and might have died without his condition being made known. This case, therefore, is utterly unlike its predecessor, the non-elimination on the part of the kidneys having poisoned the nervous system. There was also an absence of paralysis, thereby bespeaking general congestion and effusion rather than the presence of clot. There was also present the whiffing and noisy respiration of apoplexy.

The fetor of breath was also characteristic, it remaining long after the alcohol had been eliminated. Had we not examined the urine previously, this peculiar odor would have led us to do so. We endeavored to obtain crystals of muriate of ammonia by dipping a glass rod in muriatic acid and breathing upon it, and were successful. The supposition is that the urea circulating in the blood becomes decomposed into ammonia salts. I will not lay stress on this, because my assistant obtained crystals from his own breath in the same way.

We purged this man freely, set his kidneys going with digitalis, and gave him five minims of muriatic acid three times daily. We debated blood-letting at his bedside, and concluded not to bleed, on account of the great debility of his pulse. Otherwise we should have depleted him freely by cut cups.

In these cases our patients' safety lies in free purgation. We can get rid of the urea sometimes in this way. Also use diaphoretics, and try to get the kidneys going. The mineral acids are given to counteract the alkaline condition of blood that ensues. The urea becomes decomposed into carbonate of ammonia, and muriatic and benzoic acids are given to counteract.

A good deal of our success depends upon the amount of disease of the kidneys. In such a case as this, where the disintegration is advanced, therapeutics are not apt to be productive of very great results, and the urea and other dangerous elements go on increasing until death ensues.

Does the fact that the patient passes his urine stand in the way of this view? No. This man passed his water in natural quantity. The only thing here to guide us would be qualitative analysis.

A medico-legal point here arises. Suppose marks of violence had been detected about this man's head. His death would, in all probability, have been attributable to injury, when it should have been attributed to kidney trouble. I remember such a case where a man was found comatose with a laudanum bottle in his pocket. He had taken but twenty minims. He died, and post-mortem examination showed the same conditions as we have here. This again shows the latency of the affection. Deduce then the practical lesson in all these cases with brain symptoms to make an accurate examination of the patient's urine.

* Dr. Meigs, resident physician, to whom I am indebted for the clinical histories accompanying these reports. R. M. T.

New Cinchona Alkaloids.

Dr. Howard regards the alkaloid previously described by him from cinchona bark (*American Chemist*, Aug. 1871, p. 70), as identical with the quinicine, of Pasteur. He finds that quinine and quinidine when heated in sealed tubes with excess of acid, are slowly converted into quinicine. Normal cinchonine sulphate heated with glycerin, becomes cinchonicine. The salts of quinicine are similar to those previously described. Cinchonicine is also a liquid; its salts crystallize well, and are identical, whether prepared from cinchonine or cinchonidine.

EDITORIAL DEPARTMENT.

PERISCOPE.

Peritoneal Tuberculosis.

Dr. KANLICH, as quoted by the *New York Medical Journal*, says of this disease:—

The fever-symptoms at the commencement of the disease are generally very slight; exceptionally there occur at once a marked rigor, great heat, and great debility. In one of the author's cases there occurred at once startling rigors and consequent collapse. In the further course, occur nightly exacerbations of usually moderate intensity, and night-sweat; still there are remissions of several days or even months. In regard to the tenderness (pain), the greatest differences present themselves: pain is at one time very slight; again, although rarely, at the very outset, very severe and extended, but has nothing characteristic. Very variable is the condition of the exudation; there occurs with the development of the tuberculosis at times a slight, at others very considerable, peritoneal effusion. In single rare cases no full effusion whatever occurs during the entire course of the disease, but, instead of this, merely band-like thickening of the strongly-retracted abdominal walls. Also an existing effusion may be subjected to great variations; it may be either entirely resorbed, and then those phenomena may become marked which depend on the neoplasm itself, and especially on the false membrane; variously-shaped bosses and tumors become evident, sometimes placed transversely, corresponding to the shriveled, thickened, network; again, the intestinal folds form several convolutions contracted against the vertebræ and separated by deep depressions, which are covered with thick, and appear like large, rounded tumors. As of rare occurrence, it deserves mention that a largely-developed pseudo-membrane, by adhesion to the abdominal walls, may effect a complete separation of the cavity, so that, at the same time, a decided *hydrops saccatus*, and, besides this, a free effusion into the abdominal cavity, may be present.

A constant symptom from the commencement of the disease until (through the mechanical relations of the pseudo-membrane) even after the involution of the local affection, is a greater or less degree of meteorism; this is probably mostly owing to the implication of the muscular layer of the intestines; if adhesion of the intestines and shriveling of the mesentery have occurred, it is no longer, as before, the upper portion of the abdomen which is pressed forward by the crowded intestines; by repeated observations there is found here and there a changing reverberation of the otherwise dull, tympanitic percussion-sound. As well through the pressure of the fluid in the peritoneal sac, as from the contracted processes, derangements of circulation occur, and consequently œdema of the lower extremities. The spleen is generally enlarged, either from acute tumefaction or through amyloid degeneration. As to the condition of the kidneys, the author repeatedly observed a lethal termination after a sudden copious elimination of a clear, water-like urine, with cool extremities, and imperceptible pulse. Kanlich assumes three different forms of the clinical course of peritoneal tuberculosis: 1. The disease begins suddenly with marked fever-phenomena, circumscribed pain at one spot, or over a greater extent of the abdomen, and repeated severe vomiting meteorism. Stypsis, on examination, shows the objective signs of a circumscribed peritonitis (pain on pressure, slight distention of the belly, increased resistance and dullness); after a shorter or longer improvement of all these symptoms the same scene recurs, and the process extends with intermissions over the whole belly. It finally comes to a complete picture of peritoneal tuberculosis, with all its signs as above. The entire process lasts several weeks, the patient growing very thin meanwhile; after a longer pause, in which only the consequences of intestinal adhesions show themselves (stypsis, vomiting), and in which the patient continues to grow meagre, the case ends with a final pleuritis. At the same time, caused by the local processes, there occurs a copious intestinal hemorrhage, or a secondary peritonitis through perforation.

2. A second series is formed by those cases which generally come under treatment with phenomena of ascitis, with or without œdema of the lower extremities. Preceding the development of the ascites, occur slight pains in the abdomen, a feeling of pressure and tension, occasional vomiting and stypsis, loss of appetite, and slight fever-movement. Besides the other signs of ascites, meteorism and retarded movement of the intestines. After a long continuance of this condition, it proceeds, with a marked increase of the fever, to an effusion into the pleural cavity and the pericardium, and this consequence of the similar affection of several serous membranes assures the diagnosis. The picture of the disease may be changed by the fact that the exudation into the peritoneal sac is combined with hemorrhage, which is recognized by a sudden paleness, cold extremities, very frequent, small pulse, faintness, etc.

3. The cases included in this group are marked by a "decided involution of the process." After long continuance of the disease as circumscribed to the peritonæum, the fever-symptoms are wanting entirely; with a decrease of the hydrops and increased diuresis, the conditions of assimilation improve; there remain

behind, perhaps, only slight meteorism and certain disorders in the function of the intestinal canal produced by the anatomical lesions; or the peritoneal contractions are evident to the touch. After a long standstill, perhaps for months, even in these cases there follows tuberculosis of other serous membranes, of the pericardium, the pleura, or acute miliary tuberculosis, and a fatal termination is almost inevitable. The diagnosis is beset with many difficulties, since, as we have seen, there is no characteristic symptom. The exclusive limitation of the hydrops to the lower half of the body, and the absence of cyanosis, lead to the exclusion of heart or kidney-disease. If the lungs, apart from the compression by the ascites, are healthy, and the heart, apart from its high position, sound, and the urine normal, we have less difficulty in the diagnosis.

Evidences of Degeneration and Hereditary Neuropathies.

WOHLRAB, quoted in the *New York Medical Journal*, says:—

It is well known that in children of parents with mental or nervous diseases, disorders of the nervous system occur, sometimes similar, often, however, of an entirely different kind, and with greater intensity; it is here the question of a degeneration of the race, which is also often signalized by congenital departures from the formation of certain organs, even not belonging to the nervous system frequently, or by the presence of such signs of degeneration. To Greisinger is due the merit of having most expressly and repeatedly called attention to the value which these diagnostic signs possess as accompaniments of a large sum of hereditary psycho- and neuropathies.

As the physician in private practice has frequent opportunity of meeting such signs of degeneration, it may not be without benefit to re-reproduce them in the series as given by Wohlrab:

1. Deformities of the ear: narrow ear, narrow helix, extension of the upper skin of the ear-lap, without a break or with only slight indentation of the skin of the cheek; frequently rudimentary ear-laps.

2. Of the eye: coloboma of the lids, of the iris, abnormal size or congenital atrophy of the bulb; platymorphia and enthymorphia of the bulb, asymmetry of the cornea and the lens, excessive myopia, different coloration of the two irides.

3. Smallness of the body.

4. Of the genitals: fissured sexual development, abnormalities of the genitals (errors of development of the penis, defects of the uterus), sterility.

5. Defective formation of the teeth: as abnormal placement of the teeth—twisting on their long axis, abnormalities of size, dark transverse lines on the incisors.

6. One-sided action of the N. facialis.

7. Unfavorable development of face, among which hare-lip is to be included.

8. Abnormal formation of the skull.

9. Diabetes.

10. Of the organs of speech: stuttering, too high or too low a pitch of voice.

11. Of the external skin: nevi, telangiectasis.

12. Arrest of development in the members: defects of the fingers and toes, absence of a part or the entire limb, etc.

13. Also abnormalities of the internal organs certainly belong here, but the author is not able to give any observations of his own. Such signs of degeneration are rarely met with singly; they are generally several; most numerous and most marked occur in idiots. These signs of degeneration point to the hereditary affection of the individual and his blood-relations, but are not by themselves a measure of the neuropathic infection; for this only the sum of the psychical, motor, sensitive, and trophic neuropathies can avail. That, in spite of the large sum of symptoms already mentioned, the betrayal of possible signs of degeneration is not exhausted, is evident when we consider that, for example, of the anomalies of the growth of the hair, rachitis, curvature of the bones, goitre, etc. (which, much more frequently than many of the signs already mentioned, may accompany degeneration, or, in the author's words, point to an hereditary influence), no notice is taken.

On the Resuscitation of Animation in Newly-born Children.

Dr. J. GREGORY writes to *The Doctor:*—

In addition to the means already employed for the restoration of apparently stillborn children, I have for some time used, with considerable benefit, a simple but most important additional manipulation. It is not mentioned in any work on midwifery with which I am acquainted, nor do I know any practitioners who use it. For these reasons I bring it forward.

All children in whom animation is suspended in consequence of a too protracted passage from the womb to the outer world (whether from want of uterine exertion or insufficiency of room in the passage), may, in my opinion, be divided into two classes. The first is composed of those in whom the head suffers from a redundance of blood, and the second, of those in whom the head is deprived of its proper quantity. In the first class, the redundancy is generally met with in cases where the head presents naturally, but is born some time before the remainder of the body. At first it is of a natural color, but as the uterus continues to contract around the body, forcing it into as small a compass as possible, the blood is gradually driven more and more into the head, which becomes turgid, and when at last the body is expelled, we see the head often almost black, and the body perfectly white. In these cases, the escape of a teaspoonful or so of blood from the funis, before it is tied, as is generally

taught and known, aids us very much in our efforts for the child's recovery, which consist mainly of artificial respiration, the hot bath, cold sprinkling, and the application of other stimulants and irritants to the skin.

In the second class, and this it is with which we have more particularly to do, taking as before a typical case, the anæmic condition of the head, and consequently of the medulla oblongata, and that portion of the spinal cord from whence the cervical plexus is given off, is met with in footling and breech presentations, where the head and neck are born last, and the supply of blood through the funis is nearly or altogether stopped.

Supposing a considerable interval of time to have elapsed between the birth of the body and the expulsion of the head, we frequently find some such conditions as these: the body and the head pale, and apparently bloodless; not exactly the reverse of those we meet with in the first class, because, although in both cases that part of the child which is pressed upon by the maternal parts last is most emptied of blood, in the second class the absence of blood, caused by the pressure on the umbilical cord, prevents a too great congestion of any part of the child. We have then, a pale, flaccid body, scarcely any or perhaps no attempt at respiration, and a few pulsations of the heart in the minute, more or less irregular. We at once make use of one or other of the various methods of artificial respiration, not forgetting the hot bath. Time goes on, and beyond a greater regularity and frequency of the pulse, and a few attempts at respiration, and perhaps a mottled hue of the skin of the body, the head always remaining pale and death-like, we do not seem to have progressed very much. There seems to be no alternative but to go on, hoping the slight improvement will continue, and very often perseverance and skill do at last succeed in effecting a recovery.

Now I cannot see how we expect a "co-ordinate and adapted action of the muscles necessary to respiration," if they receive no nervous supply, nor can the medulla oblongata receive the impression of the necessity of breathing, and reflect it to the phrenic and other motor nerves, unless a due supply of blood be furnished to it. How then are we to get the blood where we want it? I answer, by inverting the child, and so forcing the blood by its own weight to the lowest part, that is, the head and neck.

About two years ago I was endeavoring to reanimate a child whose appearance and condition were just as I have described. More than half an hour had elapsed, and although the child showed no signs of a relapse, it made little if any progress. I took it carefully by the thighs, and held it upside down, gently swinging it backwards and forwards. In a few seconds I was pleased to see, that although before the whole body was pallid, now the head and back of the neck, which was in view, were becoming red and turgid, and almost directly afterwards, the child gasped violently, inspired, and gave as loud a cry as I ever heard from a new-born child. After ten seconds or so, I reverted it, when all respiration ceased, and the head became white. I then inverted it again, when the respiration and crying recommenced, and I allowed it to hang by its thighs for at least a minute, rubbing it well over the back of the head and neck, and pouring hot water over it. When the action of the lungs seemed to have fairly set in, I allowed it to lie on the nurse's lap with its head lower than its feet, and so it remained all night. The next day it was quite well.

Causes of Uterine Flexion and Version.

Professor SCHRŒDER, of Erlangen (*All. Wein. M. Z.*, Oct. 8), quoted in the *Doctor*, observes that in the examination of women who have just given birth to a child, during the first week, the fundus uteri is generally bent forward. As involution proceeds the right position is gradually resumed. Retroflexion is more uncommon, and is generally of pathological significance. In deviation of the uterus, except after childbirth, which has a pathological significance, this is always accompanied by weakening of the ligaments. The importance of these for keeping up the normal position, and in causing change of position forward and backward, is only to be admitted in a small degree, and the uterus itself is in fault in most of the cases; the uterus is in no wise so fixed as is supposed. The so-called ligaments have no fixed points of attachment, and permit, even when not abnormally affected, notable mobility of the uterus. The most fixed of all are the origins of the broad and round ligaments, and the first indeed prevent notable dislocation to the side. The round ligaments also prevent, when normally tense, the falling back of the fundus uteri, but do not prevent its backward tendency when the organ is pulled or enlarged.

The vesico-uterine ligaments are of still less importance, and so are the recto-uterine, and these cannot prevent dislocation taking place. Thus, the uterine ligaments are entirely unfit to afford to the uterus a firm position in the pelvis, and just as little can the vagina fulfill the function.

The uterus can, according to this, make slight side deviations as well as notable ones, either forwards or backwards. The bands which fix the cervix have no influence either on flexion or on version; and, since they only reach as far as the internal os uteri, the body of the womb may bend at this point. The cause of the normal position of the uterus, hence, lies rather in its complete connection with neighboring organs. Every one admits that the uterus is to a certain extent anteflected and anteverted in the normal condition; it has a profile rather bent, and lies with an acute angle with the vagina. The dislocation is in some sort a physiological one. When does it become so marked as to be pathological?

We must, above all, come to an understanding as to what is to be described as version and flexion; the mixed form is far commonest in practice. Flexions are clinically of more importance than versions; but what is the border between physiological and pathological anteflexion? To fix this according to the greatness of the angle were a fruitless trouble. For, firstly, this angle, even in the same individual, is not constant, but to a certain extent depends on the congestion of the uterus, on the pressure of the abdominal viscera, and especially on the fullness of the bladder; and, again, the sufferings it entails are not dependent on the degree of flexion of the uterus. If we further inquire whether the flexion is pathological when accompanied by sterility, the affair is only more complicated. For we must remember that a woman may conceive whose sterility is caused by the narrowness of the cervix uteri without any treatment, since her sterility is in this case only relative.

We do best to speak of anteflexion of the uterus as soon as anything more than a slight bending is present over the anterior plane; and to look on this as pathological, when notable disturbance of the health is caused thereby, or sterility is the consequence. It is here to be remarked that retroflexions, which as a rule evoke more pressing symptoms, are more frequent. We notice as to the frequency of ante- and retroflexion a notable difference. In positions of high cultivated persons, where ladies allow examination without difficulty, and run off to specialists, anteflexions are most common; in the lower classes, where women seek for advice less for dysmenorrhœa or difficult micturition than for loss of blood, we find mostly retroversion present. Congenital anteflexion is characterized by the fact that occurs in women who have had no children, the uterus is of normal size and consistency, and the body and cervix stand in a constant angle to each other. However, we find not rarely in sterile women the anteflected uterus softened. The connection of anteflexion of the virgin uterus with enlargement and sensitiveness of the uterus causes dysmenorrhœa.

In the swollen uterus, even when it is congested, the angle generally disappears, and a pure anteversion appears. Such anteversions are very common in virgins. Another category of anteflexions takes place among women who have had many children, one after another. The canal of the uterus is enlarged, the cervix and body move as if on hinges. This takes place in sub-involution. We meet the second form chiefly in women of the working classes. Although anteflexion is so common, pure anteversion is very much the reverse. Its cause arises chiefly from thickening and swelling of the uterus. If the uterine tissue be softened, the physiological bending forward is increased.

Whilst deviation forward thus needs no explanation, retroversion always requires one. Adhesions or tumors may cause it, or the pressure of the abdominal viscera. We find retroversion most frequently in persons who have not given birth to children, or in women who have had children, and whose uterus is enlarged; as also frequently in the second or third month of pregnancy.

The Nature of Putrid Infection.

Prof. I. Ravitsch, of the Medico-Chirurgical Academy in St. Petersburg, published in the year 1870 a monograph upon the "Nature of Putrid Infection," which, during the present year, has appeared in the German language. He has made a long and laborious and most intelligent series of experiments upon rabbits, sheep, and dogs, injecting into the veins hypodermically various kinds of decomposing animal matter, and has carefully watched and recorded the symptoms resulting therefrom. He has satisfied himself that, in the vast majority of cases, putrid blood is the cause of putrid infection. He has, therefore, used for his injections putrid fluid blood, putrid blood dried and dissolved in water, and putrid blood evaporated to dryness by boiling, and then dissolved in water.

From this experiment he believes himself justified in deducing the following conclusions:

1. Putrid infection is not wholly occasioned by *living* microscopic organisms, existing in the putrid substance: although we have no right to reject, as entirely without influence, a possible indirect effect of these organisms in the production of the poison.

2. Under ordinary conditions these microscopic organisms cannot survive in the blood.

3. The effect produced by the putrid substance is in proportion to the quantity injected.

4. There is no period of incubation in the action of this substance agreeing in this particular with the action of other poisons.

5. The sole pathognomonic symptom of putrid infection is the rapid molecular disintegration of the tissues with which the poison comes in contact, as also of the solid constituents of the blood, of the muscular fibres of the heart, and of the cells of the liver, spleen, and kidneys.

6. Especially, where such molecular distintegration occurs, do the microscopic organisms appear. In these cases it may be asserted with certainty that "decomposition begets decomposition."

7. Elevation of temperature, nausea, diarrhœa, convulsions, ecchymotic spots upon the serous membranes, considerable hyperæmia of the intestinal mucous membrane, with hæmorrhage into the intestinal tubes, cannot be regarded as characteristic indications of the presence of putrid infection.

8. A constant (though not characteristic) appearance in putrid infection is, stasis of the entire venous circulation, especially observable in the abdominal veins. Whether this has its origin in a paralysis of the vaso-motor nerves, or in insufficient force of the heart's action,

resulting from the disintegration of its muscles, further experiments must decide.

9. Putrid infection cannot, like other infecting diseases, be produced by inoculation.

Galvanism in Genito-Urinary Diseases.

Dr. ROBERTS BARTHOLOW says, in a lecture reported in the *Clinic*:—The good effects of the galvanic current are very evident in some painful affections of the bladder; as, for example, reflex irritability of the organ. Irritability due to prostatic enlargement, or to disease of the mucous membrane, is increased by galvanism. The so-called "irritable testis" is generally cured by including the affected organ in the circuit and sending through it a weak continuous current. Galvanism is, however, more especially useful in atonic states of the sexual organs. It is very beneficial in that relaxed condition produced by spermatorrhœa. We use it in this disease to accomplish two objects: to relieve the hyperæsthesia of the prostatic portion of the urethra; and to increase the power of the erections. If the former be our object, an insulated urethral electrode connected with the negative pole is introduced, and the positive is applied to the spine or hypogastric region. A current from four to six elements of Siemens and Halske is sufficient for this purpose. If we wish to excite the erectile apparatus the current must be interrupted or the polarity frequently changed. I have myself not been fortunate in the relief of cases of true impotence by electricity in any of its forms. Especially has it failed in the case of men at the middle period of life, in whom the failure of sexual power is the outcome of excessive indulgence, lawful and unlawful.

REVIEWS AND BOOK NOTICES.

NOTES ON CURRENT MEDICAL LITERATURE.

—DR. HENRY MACCORMAC, of Dublin, has long earnestly advocated the theory that the chief, perhaps the sole cause of Consumption, is "the breath re-breathed." He has written a book to show the truth of this. And he now issues a little pamphlet, "A Word with Reviewers," scoring those who scored him, and complaining, with every appearance of justice, of the treatment he has received in several instances.

—The *Report on the Progress of Otology*, read before the American Otological Society at their annual meeting, last July, by Dr. CLARENCE J. BLAKE, is an able, lucid, and comprehensive essay, which ought to be in the hands of every surgeon interested in this specialty. It is neatly published in a pamphlet of 46 pages, and may be obtained, we presume, from the printers, Alfred Mudge & Son, No. 34 School Street, Boston, Mass.

—The searching examination of Prof. REESE'S review of the trial of Mrs. Wharton for the murder of General Ketchum, which appeared in the MEDICAL AND SURGICAL REPORTER, from the pen of Dr. PHILIP C. WILLIAMS, of Baltimore, has been republished in pamphlet form by Turnbull Bros., Medical Booksellers, Baltimore, Md. It forms a neat brochure of 31 pages, and as a specimen of trenchant and masterly scientific criticism, deserves a careful perusal by the profession.

BOOK NOTICES.

The End of the World. A Love Story. By EDWARD EGGLESTON. With 32 illustrations. New York: Craig, Judd & Co.

Mr. Eggleston has uncommon ability in portraying a certain low and naive phase of American life. We do not mean that he has no ability beyond this, but certainly in his last two novels he displays unusual tact in bringing forward the quaint and picturesque in the commonest events and personages of rude frontier life. The sketches with which this work is illustrated are telling and truthful, and add much to the genuine interest which attaches to the simple and pretty story.

Nebulæ, Comets, Meteoric Showers; and the Revelations of the Spectroscope regarding them. By Prof. H. SCHELLEN, and others. "Coral and Coral Islands." By Prof. J. D. DANA, of Yale College. Boston: Estes & Lauriat, 143 Washington street. Price 25 cents.

This is one of the Half-Hour Recreations in Popular Science, edited by Dana Estes. They are selected with great judgment, as not only written by the most eminent physicists of the day, but also in a style at once intelligible and entertaining to general readers. The present number contains the really wonderful results obtained by analysis of the light emitted by those enigmatic heavenly bodies, comets and asteroids. The material is drawn chiefly from Prof. Schellen's great work, and is authentic and well illustrated.

Prof. Dana's Essay on Coral Islands is a taking little sketch of those strange formations; and, though brief, gives a very complete account of the origin of the singularly shaped groups and reefs which stud the tropical seas. For sale by Alfred Martien, Philadelphia.

On the Treatment of Diseases of the Skin: with an Analysis of Eleven Thousand Consecutive Cases. By Dr. McCall Anderson. London, 1872. pp. 180. Macmillan & Co. Lindsay & Blakiston, Philadelphia. Price $1.75.

This volume is a marvel of good printing and sententiousness. Its author, a former pupil of Hebra, divides his work into two sections, the first classifying the large number of skin diseases with which he has had to deal in the Royal Infirmary, the Dispensary for Skin Diseases, and the Cutaneous wards of the University Hospital, Glasgow; and in his private practice. The second section is devoted to the therapeutics of the cases previously classified. The treatments discussed are largely those of the present day.

The writer does not believe in the danger of "driving in" a skin eruption. In Germany, especially Vienna, local treatment is principally relied upon. In England, it appears to the author that constitutional treatment is too exclusively resorted to. He believes that most of these affections are removed most readily and permanently by a mixed local and constitutional treatment.

A disease is often being treated constitutionally, when local remedies only are used, on account of their absorption. Most acute affections of the skin require soothing remedies; chronic cases will better bear stimulating applications. Sea-water or hard-water is apt to aggravate an existing skin inflammation. Hydropathic treatment is good for acute general psoriasis. Where itching is a marked feature of skin eruptions, leaving out of consideration parasitic diseases, the empyreumatic oils or their derivatives are useful. Chronic erythema, chronic eczema, prurigo, and psoriasis afford fields for their use. If too long continued they produce a mixed papular and pustular affection, called tar acne. Wood-tar, coal-tar, oil of cade (from Juniperus oxycedrus), oleum rusci (from bark of white birch), are the oils most commonly used. These oils are mixed up with benzoated lard, etc., and rubbed well into the affected parts twice daily.

Creasote, five grains to ounce of ointment, is used for allaying irritation of the skin. Carbolic acid is also used, rubbed up with glycerine, rectified spirit, and water. Potash applications are of use in the removal of abnormal products, as the scales of psoriasis, and in many cases they cure by their stimulating effect. Those which the author is in the habit of using are, potash soap (black soap, sapo-mollis), liquor potassæ, and solutions of potassa fusa, varying in strength from two grains to a drachm to the ounce of the excipient. Cases of tinea versicolor are cured by scrubbing the whole of the eruption night and morning, with black soap or its solution in spirit. The indiscriminate use of sulphur is condemned. Impermeable dressings, such as india-rubber gloves, do good in certain forms of eczema, psoriasis, etc.

Many cases of eczema are cured by the exclusive use of purgatives:—Sulphate of magnesia, three ounces; dilute sulphuric acid, an ounce and a half; sulphate of iron, three drachms; simple syrup, four ounces; tincture of ginger, one ounce; infusion of quassia to twenty-four ounces: a tablespoonful in a good deal of water, three times daily. Cod-liver oil is indicated in the treatment of skin diseases, although they are not strumous, provided they occur in strumous, half-starved, or broken-down subjects.

In the use of arsenic, puffiness of the face or irritation of the eyes, or such-like physiological effects, if slight in degree, should not lead us to discontinue the medicine; indeed, it is sometimes only then that its beneficial action on the disease is observed. Infants may be subjected to its influence by administering it to their nurses. It is contra-indicated in acute cases, where its use irritates, in digestive derangement, and in persons with bronchitis. It is especially valuable in psoriasis, pemphigus, lichen ruber, pityriasis rubra, and many cases of eczema. But want of space forbids further quotations from these interesting pages.

Notice to Authors.—A physician of liberal education will revise manuscripts, supervise the publication of books, prepare indices, etc. Address "Editor," care of J. W. Huff, Esq., 705 Jayne street, Philadelphia.

MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, NOV. 30, 1872.

S. W. BUTLER, M. D., D. G. BRINTON, M. D., Editors.

☞ Medical Societies and Clinical Reports, Notes and Observations, Foreign and Domestic Correspondence, News, etc., etc., of general medical interest, are respectfully solicited.

Articles of special importance, such especially as require original experimental research, analysis, or observation, will be liberally paid for.

☞ To insure publication, articles must be *practical*, *brief* as possible to do justice to the subject, and *carefully prepared*, so as to require little revision.

☞ Subscribers are requested to forward to us copies of newspapers containing reports of Medical Society meetings, or other items of special medical interest.

We particularly value the practical experience of country practitioners, many of whom possess a fund of information that rightfully belongs to the profession.

The Proprietor and Editors disclaim all responsibility for statements made over the names of correspondents.

THE PHYSIOLOGICAL VALUE OF PHOSPHORUS.

We recollect reading in English history that when Charles II was in his last sickness, his physicians administered to him pills partly composed of powdered human skulls. Modern chemistry rescues us from the necessity of using the coarse and mixed forms in which elements appear in nature, and enables us to exhibit, when we wish to produce the effects desired, by these old doctors, the substances they used in neater and less repugnant forms.

We naturally seek, however, those forms which are in their character most closely allied to that we would supply. In the essay to which the prize of the American Medical Association was this year awarded, and which we have already referred to in our review of the volume of *Transactions*, Dr. SAMUEL R. PERCY undertakes to accomplish this with reference to Phosphorus. His processes are in a high degree interesting, and we shall quote from his essay the portion describing the preparation he recommends for use in medicine. The formulæ are entirely his own, and have not been prepared by others:—

"Take of the purified cocoa butter, or of beef tallow prepared in the same manner, 1000 grains; put it into a Wolf's apparatus or a clean wide-mouthed eight ounce vial, to which a cork has been adjusted with two glass tubes, one passing to the bottom of the bottle, and the other terminating near the cork; add one hundred grains of Valentine's beef extract. Put on a water bath, and keep it for some time at 212° F., agitating frequently to mix the beef extract and fat well together. Add eleven grains of phosphorus in small pieces. When the phosphorus is all dissolved, attach an India rubber tube, connected with a reservoir of oxygen gas, under pressure, to the glass tube that leads to the bottom of the bottle. Allow the oxygen to pass slowly through the mass, still keeping it constantly agitated, and at 212° F. Continue this until all luminosity has ceased, and until all the smell of phosphorus has disappeared. Take it out of the water bath, allow the oxygen to pass slowly through it, occasionally agitating, until the fat begins to become solid: then cork tightly and leave for a few days. Heat again in a water bath, and if any luminosity is visible add pure oxygen. Take out the cork and glass tubes, and continue the heat till all the bubbles of oxygen are driven off. Pour into cakes to be made into pills, or pour into capsules, as described on page 50.

The formula just described is for the use of those who prefer to take medicine in the form of pills or capsules. For children, or for those who prefer medicine in a liquid form, or for use in combination with other medicines, I offer the following formula:—

Take of lard oil, purified in the manner before described, 1000 grains, Valentine's beef extract (which is more fluid than any other) one hundred grains; keep in a water bath at 110° F., agitating to mix the beef extract and the oil: add eleven grains of clear phosphorus in small pieces; when all dissolved, bring the temperature to 212° F., and strain; attach the bottle to the oxygen reservoir, and treat it exactly as described in the last formula.

In both of these formulæ, by the addition of the beef extract and the phosphorus to the fatty matter, the color is but little deepened; but on the introduction of the oxygen the color becomes quite brown, and when the process is completed the mass is of quite a dark color. This change is not affected by heat, as heat is used before the introduo-

tion of oxygen, but the change in color is owing to a change in the chemical formulæ of the ingredients. The oil is now entirely changed in character; it has lost its albaceous smell and disagreeable taste, it has become less poisonous, and is not luminous.

In the administration of phosphorus thus prepared, we supply a form of it closely corresponding to that which is found in the brain and nerves, and hence immediately assimilable.

The especial interest which this study of phosphorus as a medicine has, rests in its singular power as a nerve stimulant and producer of bone. The materialistic axiom of Moleschott, "without Phosphorus there is no Thought," has been made famous by Buchner. Certainly it has a powerful influence on the nervous system in all its manifestations.

Some other experiments, recorded in the *Aertzliches Intelligenzblatt*, for August last, by Dr. GIORG, illustrate its power in the growth of bone. According to him it results, from numerous experiments, that artistic fractures and resections carried out on animals which were being fed with phosphorus healed with a richer, thicker, and more solid callus. As to the explanation of the way in which phosphorus works, the taking in of a greater quantity of phosphoric salt and the over-production of bone is not of small account, since truly not bones but rather osteoid bone substance is stored up in great quantity when an increase in lime salt does not exist; and quantities of osteoid tissue appear when at the same time we remove all lime salts from the food of the animal. In experiments made in this way there was attained an extraordinary richness of fracture callus. It is also most interesting to notice that the mode of growth of the bones exhibits quite an identical alteration to that seen in rickets. This is a confirmation of the theory of this disease, according to which it is caused on the one side by want of inorganic salts in the blood, and on the other on a constitutional irritation working on the bone-forming tissues. It is just this last consideration which explains the working of phosphorus on the bones.

The author incites his readers to new researches and to therapeutic experiments on the use of phosphorus. In the last respect he believes that the exhibition of phosphorus is indicated in weakly development of the bony system, in fractures, and pseudarthrosis, in sub-periosteal resections, in transplantations of the periosteum, and above all, in osteo-malachia, for which phosphorus is a true antidote. For rickets, it would seem as if phosphorus should not be given on theoretical grounds, but he advises a trial of it to be made.

In these investigations the animals experimented upon were fed with pills containing 0.0015 grammes of phosphorus, which were gradually made up to contain double as much, or they were brought into a room full of phosphorus vapor. The result was that on all parts of the bones in which, in physiological conditions, spongy bone substance is made out of cartilage, a hard histologically well-formed mass is developed with Haversian canals, like the outer layer of bones. On going on for a long time with the injection of phosphorus, more compact substance continually was added, whilst the spongy tissue previously formed is absorbed as usual, so that in fine, compact substance alone exists.

These results render Dr. PERCY'S careful study of the drug peculiarly timely.

NOTES AND COMMENTS.

The Boston Journal of Chemistry.

Among the sufferers by the great fire in Boston recently, was the *Journal of Chemistry*, one of our valued exchanges, which was burned out. The well-known energies of its proprietors, Jos. R. NICHOLS & Co., will not, however, allow that slight circumstance to interfere with its future usefulness. We rather expect in its next number to be treated with a chemical an-

alysis of its ashes. We had an analysis of its *paper* not long since; now for an analysis of paper and contents.

Sugar-Coated Pills.

We have received from Wm. R. Warner & Co., 154 North Third street, in this city, a neat mahogany case, filled with an extensive assortment of their sugar-coated pills and granules. These pills look tempting—children cry for them! We have not yet had an opportunity of personally testing their virtues; when we do, we will make a special report on them, if there is anything left of us! Till then we will "take them" on trust. See their advertisement.

Wm. A. Hamilton, 25 Norfolk Terrace, Bayswater, London, England, has issued a priced catalogue of an extensive assortment of second-hand books, ancient and modern, on science, history (including many works on American history), voyages, travels, etc., etc. These catalogues can be had at this office.

Vaccine Wanted.

We shall be very much indebted to our readers for some Vaccine Virus. We wish to distribute it to others. This we do gratuitously, whenever we have it to give.

Physicians' Fees.

We clip the following item from a newspaper:—

"Sir William Gull, the eminent London physician, who attended the Prince of Wales in his illness, went the other day to Cork, to see the Hon. R. R. Verney, lieutenant of the fifty-second regiment, ill with fever. The fee paid Sir William Gull for his attendance was four thousand dollars. It was a plain piece of gulling."

Why the sneer in the closing sentence? Sir William Gull added to an already exalted reputation by his eminent services in the case of the Prince of Wales, who was so ill last year, and why should he not be offered and receive a large fee from one able to pay, who desires his services? Distinguished lawyers receive extraordinary fees for extraordinary, yes, and even ordinary, services, and why should not physicians?

It is said that Sir Roundell Palmer's fee in the *unsuccessful* Alabama Claims case was £30,000 and a peerage, and what our lawyers received was more, probably, than many physicians receive in fees in their whole lives. Lawyers are well paid for their services to hospitals, why should not physicians be paid for theirs?

Correspondence.

The Placental Circulation.

Eds. Med. and Surg. Reporter:

As a matter of justice to me please give place in the Reporter to one single remark, to wit: that in the placental circulation "the blood flows *from* the placenta *to* the child, through the umbilical vein, and from the child to the placenta, by way of the umbilical arteries," is certainly a fact. I have never entertained the idea, nor have I at any time, any where, asserted that it flows in the opposite direction. The vein, under certain circumstances, *may* bleed after delivery, nevertheless.

Very Respectfully Yours,
A. F. A. King.

Washington, November 22, 1872.

News and Miscellany.

American Medical Association.

The volume of "Transactions" is ready. Postage 60 cents. All communications should be addressed to the Permanent Secretary, Dr. Wm. B. Atkinson, 1400 Pine street, Philadelphia.

Transactions of the Pennsylvania State Medical Society.

Copies of the last number may be obtained of the Secretary, Dr. Wm. B. Atkinson, 1400 Pine street, Philadelphia.

Death of Dr. Daremberg.

Dr. Daremberg, Professor of Medical History at the Faculty of Paris, is deceased. He was born at Dijon, April 14, 1817. Many works on the history of medicine are owing to his pen. He translated the works of Hippocrates, Oribasus, and Galen; edited the *Collectio Salernitana* (Naples, 1852–1854), and wrote many separate treatises, besides his great work, *Histoire des Sciences Medicales*. Last Spring he was ordered to give up all literary work, and he had made arrangements for the performance of his professional duties by deputy during the ensuing winter. For a time he appeared to improve, but the heart-disease from which he suffered was somewhat suddenly and unexpectedly aggravated during the last few weeks of his life, and during part of that time his sufferings were very great. He died on October 24th, at the comparatively early age of fifty-five, when his mental powers and activity were in full perfection, and just as a fresh field of influence and usefulness, and one to which he had long been aspiring, seemed to be opening before him. His private library was probably the best in existence on Medical history.

Death from Morphine.

The St. Louis *Globe* says: Dr. Everett, residing at No. 2408 Wash street, returned home from a visit at eleven o'clock on Sunday morning, and left his case of medicines and instruments on his office table in his residence. His only child, a daughter aged two years and four months, named Minnie, unobserved gained admittance to the office room.

In playing with the articles on the table she noticed the granules of morphine, and thinking they were candies, ate several of them, or about three grains in weight. As soon as the father returned to the room he instantly saw what had taken place, and summoned another physician. Both endeavored to save the child's life, but their efforts were of no avail, as it died eleven hours after taking the poison.

THE Michigan Medical Society admits female practitioners to its membership.

NOTES AND QUERIES.

Mercurial Fumigation.

Dr. J. C. M.:—Your inquiry in regard to a convenient method of mercurial fumigation, suitable, as you say, for country practitioners, is best answered by describing a plan we ourselves have often adopted.

The patient, stripped quite naked, is seated on a cane-bottomed stool, and a large blanket is fastened around his neck, its folds enveloping him, stool and all. Underneath the stool a hot brick is placed upon a plate, and a scruple of calomel is then scattered over the brick. The mercury volatilizes, and in a few minutes the patient is in an atmosphere of mercurial vapor. To this he should be exposed 15 or 20 minutes.

Scarlet Fever and Measles.

Messrs. Editors:—Are there any well authenticated cases on record, where scarlet fever and measles, each type well marked, run a simultaneous course in the same patient? Is not such belief incompatible with all *taught* laws of disease? Please answer in the REPORTER.

O. W. H——.

Edinboro, Pa.

Reply.—Such cases have been reported by most careful observers. There is nothing exclusive in the poisons. The hybrid is called by some "rubeola," and was first described by Dr. Patterson, of Leith, in 1840. See the HALF-YEARLY COMPENDIUM, July, 1872, page 200.

OBITUARY.

GEORGE COCHRAN, M. D.—Dr. George Cochran, the Health Officer of Brooklyn, died at his residence in Fulton street, opposite Johnson street, at 3 o'clock P. M., November 19th. Deceased was unmarried. His disease was congestion of the lungs.

Dr. Cochran was born in Kellybane, County of Londonderry, Ireland, in 1832, and was, consequently, forty years of age when he died. He has been well known in the medical profession for twenty years past. He was for eight years Police Surgeon under the Metropolitan Board, and subsequently Surgeon of the Brooklyn City Hospital. In May, 1870, he was appointed Health Officer, which position he still retained up to the time of his death. The flags on the city buildings were displayed at half-mast, in respect to the deceased official.

MARRIAGES.

BARROWS—ODELL.—Oct. 24, in the Brick Church, N. Y., by Rev. Dr. Murray, Arthur A. Barrows, M. D., and Edith, only daughter of Lyman Odell, all of New York City.

CASE—BLANCHARD.—At the M. E. Church, Delphi, Ind., on Nov. 12, by the Rev. I. W. Joyce, Jennie A., eldest daughter of Dr. J. R. Blanchard, and John S. Case, Esq.

DOWNIE—HERSHEY.—In this city, Nov. 21, in the Eighth Baptist Church, by the Rev. James Y. Mitchell, assisted by Rev. A. S. Patton, D. D., Rev. David Downie, pastor of the Baptist Church, Monroeville, Ohio, and Miss Annie S., daughter of the late Daniel Hershey, M. D. of this city.

MORROGH—PERRY.—Nov. 19, 1872, at the residence of the bride's parents, at Stamford, Conn., by Rev. R. L. Burtsell, D. D., assisted by Rev. William F. Morrogh, D. D., Clifford Morrogh, M. D., of New Brunswick, N. J., and Cornelia, daughter of A. S. Perry, Esq.

RAUCK—SMITH.—In this city, Nov. 19, at the residence of David C. Smith, the bride's brother, by the Rev. William Major, John W. Rauck, M. D., of Philadelphia, and Mary A., daughter of the late John N. Smith, of Lebanon, Pa.

SMITH—BANKS.—On Nov. 18, at Brooklyn, by Rev. J. M. Buckley, Dr. Orsamus Smith, of New Orleans, and Louise, daughter of George Banks, of Patterson, N. Y.

STEWART—ALLMAN.—In this city, Nov. 14, at the residence of the bride's parents, by Rev. Alexander Reed, D. D., assisted by Rev. John B. Dales, D. D., William S. Stewart, M. D., and Delia, daughter of Thomas Allman, all of this city.

DEATHS.

DOWNER.—At Lynchburg, Va., Nov. 15, Edwin Downer, M. D., late of Westfield, N. J., in the 31st year of his age.

FRISBIE.—In Springfield, Nov. 14, 1872, of anæmia, Mrs. M. M. Frisbie, wife of Dr. C. W. Frisbie, of Fort Plain, N. Y., in the 31st year of her age.

GARDNER.—In this city, Nov. 17, Emily Florence, infant daughter of Dr. Charles H. and Emily H. Gardner, aged 15 months.

HARDY.—The wife of Dr. Benjamin F. Hardy, a prominent physician of San Francisco, took chloroform Nov. 21st, to cure neuralgia, and died from the effects of the dose.

MUSSEY.—Nov. 4, near San Antonio, Texas, John Mussey, Esq., eldest son of the late Dr. R. D. Mussey, in the 59th year of his age.

STERLING.—Nov. 16, 1872, at Port Richmond, Staten Island, Margaret Kelso, wife of Dr. John W. Sterling, in the 72d year of her age.

STEVENS.—In this city, Nov. 19, after a lingering illness, Caroline Hart, wife of Dr. A. H. Stevens, aged 61 years.

UPSON.—In Bath, N. Y., Nov. 17, at the residence of his son-in-law, Rev. James M. Platt, Dr. Hiram Upson, formerly a physician in New York City, aged 69 years.